THE VETERINARY RECORD

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Edited by WILLIAM HUNTING, F.R.C.V.S.

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VERBAL DEFINITIONS.

What does the word mean? Because the question is not answered many grave misunderstandings arise. In a recent case of "cruelty" a V.S. for the prosecution swore the "horse had "Ringbones" on both feet." The V.S. for the defence swore there was "no evidence whatever of ringbone."

Naturally the Court imagined the expert witnesses were either fools or rogues, and all readers of the report in the newspapers probably adopted a similar opinion. As a matter of fact there was no difference of opinion. The two men were speaking of different conditions and neither was dishonest. One defined ringbone as "a disease implicating a joint," the other as "an exostosis on the phalangeal bones." The horse had an exostosis, but it did not interfere with a joint.

Now here is a case in which disagreement about a verbal definition leads, apparently, to a display either of ignorance or perjury in a public court. It must be allowed that such an event ought not to be possible, and it could not be if some authoritative pronouncement were made on the subject. We do not ask for any hard and fast uniformity in definitions, but we do ask for such an agreement as to the use of words as may prevent apparent contradictions. A lameness which affects an articular surface is a very serious matter, and when it proceeds from changes which limit motion it is incurable and permanent. A lameness which arises from exostosis on a bone and does not implicate a joint is as a rule temporary and curable—it subsides when the ostitis or periostitis ceases. "Ringbone" is not a scientific word, it is a popular term which by horsemen is recognised as significant of a serious, if not incurable, lameness. Some regard must be had to the general and wide-spread meaning given to terms which are, and have for long been, in use. A bony enlargement on the side of the *os suffraginis* may exist throughout life and cause no lameness. A bony enlargement which implicates either the pedal or coronet joints always causes lameness. With such a definite and practical distinction it seems absurd to give both conditions the same name.

It may be argued that as either condition causes lameness, and that as an exostosis which is now away from any articulation may spread so as to implicate a joint, the distinction between the two is purely academical. The reply is that in the majority of cases exostoses on the bones, away from the joints, do not extend to the articular surfaces; and that real ringbone developes around a joint and inevitably implicates it.

We quite allow that there is room for argument on both sides, but the practical issues are so important that we insist on the expediency and usefulness of an authoritative definition, if such could be arrived at.

Some of the veterinary associations might take up the question, or even the Council of the R.C.V.S. might issue a definition. Meantime our individuality is producing a distinctly unfavourable impression on the general public and the horse-owner.

DISEASES OF ANIMALS.

The returns of scheduled diseases are now available for 52 weeks of 1904—to Dec. 24th. They do not show much progress.

Anthrax has destroyed 1531 animals against 1143 for the previous year.

Glanders attacked 2620 in 1904 against 2499 in 1903.

Swine Fever counts 1188 outbreaks against 1478 in the previous year.

Rabies and Foot-and-Mouth disease have not been seen for two years.

Ireland returns only 7 attacks of Anthrax, 34 of glanders, and 182 outbreaks of swine fever.

Epizootic lymphangitis has apparently been confined to Army horses.

"Careful observation makes a skilful practitioner but his skill dies with him. By recording his observations he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of Pathological Science."

SUCCESSFUL REMOVAL OF A LARGE THOROUGHPIN.

I read with great interest Mr. Ellison's notes in your last issue of the removal of a thoroughpin, and (perhaps from my own stupidity) I must say I learned very little from their perusal, further than that a successful operation had been performed.

As it must be a matter of great interest to every member engaged in horse practice, I am sure Mr. Ellison has only to be asked to give a more lucid description of the operation, the instrument with which it was performed, and the preparation which was injected, and which is suggested by Mr. Deans. Otherwise I fear others, like myself, will read his notes without much profit.

I am the more interested in the case from the fact that I also successfully operated on a thoroughpin some time ago, and which differed from Mr. Ellison's in not being organised, but from its enormous size and the pain it occasioned was threatening the animal's life, and consequently required urgent treatment.

When called in I found a very big heavy horse had been standing on three legs in the same place for several days in a field. The hock swollen all round almost as big as a football, very tense, hot and painful, the animal evidently suffering great pain, perspiring more or less, fast breathing, belly

tucked up, appetite impaired, and with great difficulty was got into the stable, a distance of about 50 yards.

I recommended slings, hot fomentations, cooling lotions, etc., and inwardly stimulants and diuretics, without much improvement; in fact, animal's appetite was becoming still more impaired. At the end of a week I suggested drawing off the liquid and injecting Tr. iodii., having first warned the owner that although I had read of its being successful I had never seen it tried, and that only with his permission would I operate, he taking all responsibility, which he immediately consented to. I drew off the liquid with an ordinary hypodermic syringe and injected half an ounce of Tr. iodii.; three days afterwards I did the same again, and in three days more I a third time drew off what liquid had collected and injected the Iodine. By this time I found the liquid was assuming the appearance of ordinary matter, and where the needle was inserted was oozing out. The hock was now daily gently squeezed and kept quite empty, the liquid discharging where needle was introduced. From this time the animal made a gradual recovery and a decided improvement in animal's general symptoms, appetite improved, breathing became natural, lameness disappearing. Hock was blistered six weeks afterwards, and in three months only trace of thoroughpin was a thickening in the skin on both sides of hock, the horse doing his ordinary work.

AN OBSCURE COUNTRY VET.

GLANDERS, AND SIR WALTER GILBEY.

By H. CAULTON REEKS, F.R.C.V.S.

In dealing with a recent outbreak of glanders in the neighbourhood of Spalding it has been my misfortune to have been considerably harassed in assisting to enforce the very necessary regulations by the arrival on the scene of a pamphlet written by Sir Walter Gilbey.

That those who have not seen it may follow me in the comments I shall afterwards make, the pamphlet needs describing. I do not think I shall be doing its author an injustice by condensing it as follows:

Paragraphs 1, 2, 3, 4, 5, and 14. These consist solely of an appeal for further compensation to the owner of animals compulsorily slaughtered.

Paragraph 6 contains the following: "Now if the public welfare demand careful dealing with any contagious animal disease, that disease is glanders. Its peculiarly obscure character at early stages renders it exceptionally dangerous, and when developed it is highly contagious. For these reasons it is most desirable that encouragement should be given horse-owners to report the existence of suspected cases."

Paragraphs 7, 8, and 9 are again concerned with appeals for higher compensation.

Paragraph 10. This describes Mr. Cope, Chief Veterinary Officer of the Board of Agriculture, *in 1898* (mark the date), declaring mallein to be a thoroughly reliable test for glanders.

Paragraphs 11 and 12 say that since 1898 doubts have arisen concerning the test's reliability, and in brief describes experiments made by Mr. Cope *in 1903* (again mark the date) with mallein on glandered and in-contact animals, and published by him in his "last Report of the Proceedings under the Diseases of Animals Act for 1903."

Paragraph 13. Here Sir Walter himself gives as *his own deduction* from the above mentioned experiments that "Mallein is not absolutely reliable as a test." . . . . "It would seem, therefore, that the mallein test is not one upon which much reliance can be placed. . . . . let us ask that every care be taken to prove that a test of disease is a real test."

Paragraph 14 appeals again for higher compensation.

With Sir Walter's repeated statements that a higher rate of compensation is advisable most veterinary surgeons will be in agreement. At any rate, I will speak for myself—I am.

Having admitted that, we have disposed of paragraphs 1, 2, 3, 4, 5, 7, 8, 9, and 14 of the pamphlet referred to.

Also, I quite agree with the statement that "the public welfare demands the most careful dealing with glanders." I may go even further than that and say that every other veterinary surgeon also is fully alive to the importance of dealing carefully, and withal decisively, with so dangerous a disease as glanders, without a large amount of prompting from even so high an authority as Sir Walter Gilbey.

That disposes of paragraph 6 of the pamphlet, leaving its author and myself still in perfect agreement.

Now, however, we come to paragraphs 10, 11, 12, and 13. Here I most certainly fall foul of Sir Walter. Regarding the reliability or otherwise of mallein as a diagnostic in glanders we hold exactly opposite opinions. Seeing that Sir Walter takes the one opposed to what is believed by the majority of English veterinary surgeons to-day, we may ask him, even though he be a layman, to in some measure justify his position.

It would be interesting if he would first explain how, from the experiments he gives, he arrives at the conclusion he does—namely, that mallein as a test is unreliable. The results of those experiments I read exactly the other way.

Secondly, I would ask Sir Walter, if he is so careful to describe Mr. Cope declaring mallein to be a thoroughly reliable test in 1898, to explain how it is that he is so careless, or so intentionally misleading as to suppress the undermentioned conclusions arrived at by Mr. Cope in 1903:

> "The effect produced upon the suspected animal by the application of the mallein test is now accepted to be so reliable that in many of the large horse-keeping establishments in London Glanders has been eradicated from the studs by the slaughter of every animal which reacts, and

what is still more important these studs have been kept practically free from glanders by rejecting every horse that reacts before it is introduced into the stud. This is a material fact which cannot be ignored, and is founded upon such a sound basis that if the system could be applied to all suspected horses throughout the country glanders would, like many other contagious diseases which were once prevalent, become unknown, unless it be reintroduced from abroad."

These are Mr. Cope's own words. They may be read in the very "Report" alluded to by Sir Walter, namely that published in 1903, and must have been written with the results of the experiments referred to fresh in his mind.

How, then, does Sir Walter reconcile that with his statement that "doubts have arisen since 1898?" Or, rather, how does he explain that his pamphlet is so worded as to imply that associated with these doubts is Mr. Cope himself?

Unless some further explanation is forthcoming, there is but one of two intelligent readings that can be given that portion of Sir Walter's pamphlet relating to the reliability of mallein, and that is, either a deliberate attempt on the part of the author to throw dust in the eyes of the public; or such a sublime confidence in his own powers of deducing evidence from a series of scientific tests that he, a layman, chooses to offer to the world his own reading in preference to that of an admitted scientist.

If Sir Walter chose to ventilate his opinions solely in the free and open light of one or more of the several scientific journals ready to his hand, then there would have been no need for this article from me. But does he do that? No.

What does happen is this. Some veterinary surgeon has on his hands an outbreak of glanders, diagnosed without, but confirmed, if he is a wise man, by the use of mallein. The annoying pliability of the existing glanders regulations already place that veterinary surgeon in an unenviable position so far as he is concerned with persuading the owner to take reasonable and proper care for the safeguarding of his own and the public interest. His position is immediately rendered still more difficult when the morning's post brings to the owner the pamphlet already described, having attached to its top, left-hand corner a "sweet" little card, with the "magic" inscription—

"With Sir Walter Gilbey's Compliments."

Then, of course, comes trouble. Trouble with the owner, who naturally sees eye to eye with Sir Walter; a host of explanations to the Local Authority; and trouble in a multitudinous explanation to clients in the immediate neighbourhood.

With my troubles in those respects I do not expect Sir Walter to sympathise. Their proper appreciation I must leave to my professional brethren.

This much, however, I would ask Sir Walter to consider. Will an ill-advised propaganda of this description be productive of good?

At present Sir Walter evidently thinks that it will. In that case I ask him for his further consideration, and confront him with this—Would it not be advisable, before addressing his pamphlet in the indiscriminate manner indicated by this particular instance, to first ascertain—

Whether or no the owner to whom it is sent is capable of giving it intelligent understanding.

Whether or no any of the animals concerned in the outbreak are exhibiting clinical symptoms.

The number and value of the animals.

Whether or no the owner has been offered by the Local Authority a more than fair and liberal compensation for his loss.

Surely that is the course which would be followed by a man of discretion. At any rate it should be preferable to posting up an uneducated man with literature, the *correct* conclusions to be drawn from which are only to be gathered by a man with a scientific training; and which literature may be the means of seriously hampering the work of "the man on the spot," who is at any rate attempting to do his honest best both for the owner and for the well-being of the general public.

A last thought that will rise to the minds of those acting as Veterinary Inspectors under the Local Authorities is this—How far does the Chief Veterinary Officer of the Board of Agriculture approve of the bandying about of his name in an ill-concealed attempt to subvert reasonable regulation in the case of a loathsome and dangerous disease? Surely not at all.

Royal College of Veterinary Surgeons.

FELLOWSHIP DEGREE.

At a meeting of the Board of Examiners for this Degree held in London on the 13th December, six candidates entered for the examination, and the following is a list of those who passed:

Capt. F. S. H. Baldrey, I.C.V.D. *
Capt. G. K. Walker, I.C.V.D. *
Mr. E. R. Edwards. *
Mr. Arnold Spicer. *
Mr. P. J. Austin.

The examiners were Professor J. Macqueen, Mr. J. Malcolm, and Mr. W. Hunting.

ARTHUR W. HILL, *Secretary.*

Marked thus * have received the Diploma.

POISONING BY SENECIO BURCHELLII,

THE MOLTENO CATTLE DISEASE.

By W. H. CHASE, M.R.C.V.S.

The following paper was read before the November meeting of the Molteno Farmers' and Fruit Growers' Association (Mr. C. A. Pope in the chair) by Government Veterinary Surgeon W. H. Chase, who was detailed to investigate the cause of deaths among cattle in the Molteno district. He said:

"I am very pleased to report to you here to-day the result of my enquiries into the cattle disease, which you will remember the Chief Veterinary Surgeon, Mr. D. Hutcheon, sent me here to investigate in January last.

You are all, no doubt, fully aware of the symptoms of the disease. In a few cases the animal has been noticed to be unthrifty for some time, but in the majority of cases the affected animal is only noticed to be sick about three days before death. Generally the first noticeable symptom is diarrhœa of a most persistent type, which continues in spite of the administration of remedies, which in the ordinary way would stop it. In cattle, the milk supply quickly diminishes, the coat becomes dry and staring, there is no desire for food, and soon straining commences. At first the strains are slight, but they quickly increase both in intensity and frequency, until just before death. I have timed them to occur fifteen times to the minute. As a result of this violent straining, the rectum often gets everted and the blood vessels in the region are ruptured. As soon as straining commences, the animals become in great pain. In some cases they will lie down and groan, with the head stretched straight out in front of them. In others, they remain standing, get into a frenzied condition and attempt to charge anyone approaching them. Ultimately, the affected animals become unconscious, but the straining continues up to the time of death, generally from two to four days after symptoms are first noticed.

Treatment.

I regret that I cannot lay before you any curative for this disease. When symptoms are noticed, either the liver with the gall bladder is in such an advanced diseased condition, or the fourth stomach and intestines are so inflamed that successful treatment is impracticable. I have received many valuable suggestions from the Chief Veterinary Surgeon with regard to treatment, have tried many different kinds of treatment, and have looked on while farmers have adopted their own treatment, but up to the present have never seen a typical case recover.

I am confident that our best chance of combating this disease is by prevention.

Post-Mortem.

The most marked changes are seen in connection with the liver and gall bladder. In almost all cases, the liver has been found to be in a condition known to us as Chronic Cirrhosis. It has a leathery feel and when cut into is found to be very tough. In a few cases, to the naked eye, the liver did not appear to be much altered, but upon microscopic examination it was found to be diseased, being in a state of acute venous congestion. Generally, however, the liver is reduced in size and of a slatey blue colour. Its edges have lost their sharpness and are rounder than normal.

The gall bladder is always found to be distended—in fact, in the majority of cases it seems impossible for it to contain any more bile. In one case in which I measured the contents, it was found to contain 32 ounces of bile. The bile usually varies from a yellowish black to a black colour and is very viscid, being almost of the consistency of treacle.

The interior of the gall bladder often shows a number of red spots, about the size of a pin head. These spots have also been seen in a few cases on the interior of the urinary bladder, and both inside and outside the lining membranes of the heart.

The first three stomachs appear quite healthy, but there is a good deal of change in the fourth stomach. It shows red hæmorrhagic spots over its whole surface. The folds of the mucous membrane are thickened by a sub-mucous exudation of a gelatinous fluid. This lesion is present in every case of the disease that I have seen. There is generally inflammation of the small intestines, which varies in degree and is most marked where the bile ducts open into the bowel.

Whenever the liver has not been found to be badly diseased, there is marked change in the fourth stomach and intestines, and *vice versa*.

The blood vessels in the last part of the large bowel are found to be congested, caused by the excessive straining.

The Cause of the Disease.

Now, gentlemen, the first thing with regard to the disease that strikes one as peculiar, is that the farms on which the disease has appeared are practically all in one direction and all on the Cyphergat side of Molteno.

With reference to the organs affected there is only one way in which the liver can get into the leathery state in which we find it, and that is by the ingestion of something which is taken as food or drinking water.

I was certain that the drinking water was not the cause, the only possible solution was that there must be an injurious plant in the veld.

A number of veld plants, peculiar to this district were submitted to Prof. McOwen, the Government Botanist, for examination and report, and eventually we found the plant with the long stalk, lanceolate leaves, and many headed small yellow flowers, known botanically as "Senecio Burchellii."

This plant has a brother, the "Senecio Jacobœa," commonly known as "ragwort," which has caused a precisely similar disease in New Zealand.

You will remember that at your meeting in March last I spoke of this plant, and was then very suspicious of it.

It is always a mistake to jump at a conclusion when investigating a disease, and with the object of going thoroughly into its cause and nature, three cattle were obtained from a district where the disease was known not to exist. They were stall fed on dry forage, and the following experiments conducted :—

Ox No. 1.—This animal was inoculated under the skin with 20 c.c. of bile taken from an affected animal, and the rest of the contents of a gall bladder (20 ounces) were given by the mouth. A similar infection and dosing were repeated at the end of seven days. This animal was kept for five months, and beyond a swelling at the seat of inoculation, showed nothing incompatible with health.

Ox No. 2.—20 c.c. of blood were drawn from the jugular vein an infected animal. The blood was citrated (to prevent clotting) and injected into the jugular vein of Ox No. 2. At the end of seven days this was repeated, and up to the end of five months the result was negative.

Ox No. 3.—Some lukewarm water was added to the contents of the first two stomachs, taken from an infected animal. This was macerated for twenty-four hours, and the fluid strained off. Six bottles of this fluid were given daily for ten days, when no more ingesta could be obtained, as the disease had stopped.

This animal was unaffected, and on April 22nd, when we were sure that the plants included under the head of Seneciones, caused disease of the liver, we used this animal for a feeding experiment.

The plant was rapidly disappearing. I was only able to obtain a little less than ½lb. daily, and I was unable to obtain this for long, as the plant became quite withered owing to drought.

After the small rains we had in the early part of last month, this weed soon made its appearance. It was the first green plant that appeared after a six months' drought, and the cattle were ready to eat anything green. On October 12th I obtained about four ounces of the plant as it was coming up, and dosed Ox No. 3 with it. This was repeated on the 13th, 14th, and 15th.

On the 15th he was noticed to be sick. He was purging badly, refused all food, and soon started to strain. This continued through the night of October 15th. He

became in great pain, eventually became unconscious, and died on the morning of the 16th.

The straining, in the last stages was very severe, so much so that the rectum became very everted.

The *post-mortem* on this animal was just as typical of the disease as it occurs naturally. The gall bladder was found to be distended and inflamed. The liver itself was not leathery, but as you will see from the report of Mr. Robertson, the Government Bacteriologist, was in a state of "Acute venous congestion," as has been met with in several of the cases occurring naturally. The fourth stomach showed very marked thickening of the leaves, and the red spots covered its whole surface.

Conclusions.

From the negative results obtained from experiments 1 and 2 and the positive result of Experiment 3, I can confidently assert that the plant, specimens of which I have here, known as "Senecio Burchellii," is the cause of the disease which was killing off numbers of cattle in this district.

I do not mean to infer that the plant taken in small quantities, where the veld is good, has any marked injurious effect. As you know, this plant is seen on almost every farm in this district, but on the farms where the disease has been experienced it appears in large quantities, and in some cases has practically overrun the veld.

This being so, our ability to prevent the disease depends upon our being able to withhold our cattle from obtaining any quantity of the plant.

Total eradication of the plant, though, of course, to be preferred, is, I am afraid, hardly practicable on most of the farms where this disease has occurred, but I think we could successfully combat and prevent the disease by keeping down its growth.

I am not going to tell you how to eradicate the plant —you probably know more about that than I do—but I would certainly advise all of you who have your farms well fenced, to run your cattle in the camps where the plant exists in the smallest quantity.

I may mention that there is one point in connection with the disease that is not cleared up, and that is the leathery condition of the liver. I am of opinion that if the plant is taken for any length of time in small quantities, the leathery condition of the liver would be produced, whereas if it is taken in larger quantities the changes in the fourth stomach and intestines are more pronounced, and the liver is not leathery, but in a state of chronic venous congestion.

With the idea of clearing up this point, I have been allowed to obtain a young ox, which will be fed on dry forage together with a small quantity of the plant daily."

Some discussion followed, and on the motion of Mr. A. Francis, seconded by Mr. A. C. Vice, a hearty vote of thanks was accorded to Mr. Chase for his work, and the Secretary was instructed to urge on the Government the advisability of supplying Mr. Chase with two cattle to try by experiment if the effects of the weed are cumulative or not.—*The Agricultural Journal*, Cape of Good Hope.

THE DANGERS OF AN IMPURE MILK SUPPLY.

By Prof. H. A. Woodruff, M.R.C.V.S.

Paper read before the Sanitary Congress at Glasgow.

(Abstract.)

Apart from the practically universal use of milk in ordinary diet, when we consider that milk is especially (and unfortunately in an increasing degree) the diet of a large number of infants under one year old, and also of invalids, in which cases the natural protective forces of the body are weak ; and that while its power for good, if pure, is great, its power for evil, if impure, is equally great ; it is difficult to exaggerate the importance of a pure supply. But not only are we disposed to strive for a pure milk supply by these general considerations, but also because there is unfortunately only too much evidence to show that infected milk has been responsible for many serious outbreaks of disease in the past, among the more important being typhoid, diphtheria, scarlatina, epidemic sore throat, diarrhœa, and not least tuberculosis.

The Cow as a source of danger.—There are certain diseases to which the cow is subject which may also affect human beings, and of these the more important must be briefly considered.

Tuberculosis.—The prevalence of tuberculosis among cattle is well known, and from their conditions of life milch cattle are the commonest victims of this disease, probably 30 per cent. being affected to a greater or lesser extent. The important question as to whether bovine tuberculosis is the same disease as tuberculosis of man, and whether the infection can be conveyed from the cow to the human subject, has received much attention of late, and it is satisfactory to those who have throughout urged the necessity for continued precautions to guard against the danger of tuberculous meat and milk, that their views have been endorsed in the interim report of the Royal Commission. Assuming then the possibility of infection by means of milk, what is the degree of danger?

It is generally agreed that only those cows with tuberculosis of the udder are likely to give infected milk, and M'Fadyean on this point says, "My own experience leads me to think that about 2 per cent. of the cows in the milking herds of this country are affected with tuberculosis of the udder." This then represents the possible risk from milk, but this risk is by no means uniform all over the country. In London during thirteen quarterly inspections from 1899 to 1903, the number of cows examined was never less than 3,900, and out of these the number with "actual and suspected tuberculous udders" was on the average only 0·2 per cent. In Manchester in 1901 of 1,839 cows (in town byres) examined, only 1 was found to have tuberculosis of the udder (·054 per cent.) whilst out of 1,441 cows in country cowsheds, whose milk was consumed in Manchester, 15 were found with tuberculous udders (1·04 per cent). These reports speak volumes for the success of efficient inspection and supervision.

Foot and Mouth Disease.—This disease is fortunately unlikely to get a permanent foothold in this country, but there is always a danger of infection being introduced from abroad in hides, wool, straw, etc. At the same time the risk is slight.

Mastitis.—An inflammatory condition of the udder is so common as to be well known to every dairyman, and it is usually put down to a chill, or a blow, or to careless milking. In a recent investigation, Henderson found three main types, viz., tuberculous, purulent, and hæmorrhagic, with streptococci as the predominating organisms in the purulent form, and a bacillus of the B. coli group as the prevailing one in the hæmorrhagic type. The importance of a correct knowledge of this condition lies in the fact that cows with inflammation of the udder have been held responsible for both epidemic sore throat and epidemic diarrhœa in the human subject. It is now generally admitted that epidemic diarrhœa—a specific bacterial disease affecting chiefly very young children—is most frequently caused by the consumption of infected milk. Newsholme is of the opinion that "the fundamental condition favouring epidemic diarrhœa is an unclean soil, the particulate matter from which infests the air and is swallowed, most commonly with

food, especially milk."* Several organisms have been held responsible for the disease, but chiefly: (*a*) streptococci, (*b*) the bacillus enteriditis sporogenes (Klein), and (*c*) organisms of the bacillus coli type (Delépine), two of these being among those described as prevailing in mastitis. It must be noted that the great majority of the deaths from this cause occur in children artificially fed.

How important this is, is only realised when we remember that this infantile rate has remained almost stationary at a seriously high level for many years, and, in fact, reached the highest point, since 1850, in 1899, with 163 deaths per 1,000 births.

Of sore throat epidemics there have been several for which no other cause but milk could be assigned.† Two recent outbreaks near London, the one at Woking in October, 1903,‡ the other at Finchley in January, 1904, were attributed by the respective medical officers of health to cows affected with mastitis, apparently of the ordinary purulent type.

There are two other diseases in which cow's milk has often been the medium of infection, and, more important to us, for which the cow has been held by many to be directly responsible; these are diphtheria and scarlatina.

Diphtheria.—An important question is whether the cow may be the subject of this disease and so a source of infection. In a series of experiments conducted by Klein in 1886, a culture of B. diphtheriæ injected subcutaneously in two cows produced not only the local lesion, but in five days there occurred a papular eruption on the udder and teats. In the lymph of the vesicles, and also in the milk, Klein found the diphtheria bacillus, and was able to produce a like disease in calves by inoculation. In a more recent investigation by Dean and Todd of a small outbreak of diphtheria in 1901, the cows yielding the suspected milk were found to have an eruptive disease of the udder, and cultures of virulent diphtheria bacilli were got from the lesions and the milk. Further investigations, however, appeared to show that the udder eruption was not itself due to diphtheria, but that in some unexplained way the B. diphtheriæ had got into the lesions, and had been able to grow and multiply there. This of course is far from proving that cows are the subjects of diphtheria, in fact the majority of bacteriologists agree with Crookshank that "there is not sufficient evidence to justify the conclusion that the infectivity of the milk is epidemics of milk diphtheria has been proved to be due to a morbid condition of the cow."

Scarlatina.—As with diphtheria, so with this disease, there is the possibility of accidental contamination of the milk by contagium from a human source, either by the milker or by some person handling the milk before it reaches the consumer, and in the majority of cases of infection by means of milk this method is sufficient to account for it. But it is the firm opinion of many medical men that infection can come directly from the cow, herself the subject of the disease. In an investigation made by Power and Wynter Blyth, at the time of the historic Hendon outbreak in 1885, they were of opinion that the outbreak was traceable to a certain dairy at Hendon, and to certain cows in that dairy which were suffering from an ulcerative eruption on the udder and teats. Klein, after bacteriological investigation, expressed the opinion that the disease of the cows was the analogue of human scarlet fever. He isolated a streptococcus from the lesions in the cow, which he also found in human scarlet fever, and which he holds to be the specific cause of the disease. At the same time it is by no means accepted as proved that this streptococcus is the true cause of scarlet fever, and without proof of this it was impossible to prove that the diseased condition in the cows was the cause of the scarlet fever epidemic in human beings. Moreover, in a report to the Board of Agriculture, Crookshank affirmed that the disease among the cows was in fact cow-pox, and in this view he was supported by Wortley Axe. Again, in a series of experiments about the same time, M'Fadyean was unable to infect cows with scarlet fever. It is hardly necessary to state that the general view of the veterinary profession is that the cow is not susceptible to scarlet fever, and cannot be looked upon as the source of the infection when milk is proved to have caused an epidemic.

Sources of Infection other than the Cow.

Infection during milking.—This arises from a dirty condition of the udder and teats, from dirt and hairs from the belly and tail of the cow, from dust arising from fodder and litter in the byre, or from want of cleanliness on the part of the milker.

During handling and preparation. — The various utensils used for straining and containing the milk—sieves, pails, cloths, etc.—are by no means always thoroughly sterilised. In many cases, indeed, where washing alone (without the aid of heat) is relied on to cleanse the milking vessels, the water used is far from pure. The Aylesbury Dairy Co. are stated to find it necessary to reject more than half of the farms, otherwise suitable, owing to faulty water supplies.* Again, by mixing the milk of all the cows in the byre, the contamination of the milk of one is the contamination of all.

During transit.—Much of the milk consumed in large towns is produced in the country, and has to be conveyed long distances by train. The time it is kept on country stations, and in transit, often in closed or ill-ventilated vans, and almost always without refrigerators, has a marked influence on the growth and number of bacteria. Again, the churns are frequently not sealed, and both exposure and adulteration are quite possible, and undoubtedly occur.

At the town dairy and during delivery.—The shops in which milk is sold may be generally classified as (*a*) those for the sale of dairy produce only, and (*b*) those in which milk is one of a great variety of articles sold. In the former the chief methods of contamination of the milk are: (1) its exposure in a large vessel on the counter, (2) the use of a special dipping-can for measuring out the milk, (3) the presence, especially in the summer, of large numbers of flies. In the latter, the chances of infection are infinitely greater and too many to be enumerated.

During delivery, in the majority of cases, the churns are not fastened and sealed, but may be opened by the milkman, so affording opportunity for adulteration and infection. In some cases, too, a dipping-can is used in delivery. Again, the common practice of buying extra milk to make out a shortage is responsible for increased chances of infection.

Typhoid Fever.—Impure water supplies to cow-sheds have already been mentioned as a source of general infection, but in the case of one disease, typhoid, the water supply is so pre-eminently the source of danger as to need special remark. Epidemics of typhoid fever have in several instances been traced definitely to infected milk, but here, at any rate, there is no difference of opinion as to the ultimate source of the contagium. In this case the cow is not suspected, but it is generally recognised that infection is from the human

* *Public Health*, 1899—1900, Vol. XI1., pp. 139—213.

† "Bacteriology of Milk," by Swithinbank and Newman, p. 352-361.

‡ J. Wortley Axe, *Veterinary Record*, March 12th, 1904, p. 575-77.

* *British Medical Journal*, April 11th, 1903, p. 877.

subject, either directly, or more commonly through the medium of an infected water supply.

Another frequent source of danger is the occurrence of some contagious disease, either in the persons or among the families or intimates of milkers or others engaged in preparing the milk, and no doubt this is *the* source of infection with diphtheria and scarlatina. Lastly may be mentioned the danger from the use of preservatives in milk, especially when it is remembered that not uncommonly milk is dosed successively by the farmer, the contractor or middleman, and the retailer, with some more or less injurious antiseptic. No one can doubt that the effects of these agents, taken even in small doses day after day, are harmful to the consumer.

The legal provisions which apply generally in England and Wales are contained in :—

1. The Dairies, Cowsheds, and Milkshops Orders of 1885, 1886, and 1899 ;
2. The Contagious Diseases (Animals) Act, 1886, section 9 ;
3. The Infectious Diseases (Prevention) Act, 1890, section 4.

The Dairies, Cowsheds, and Milkshops Orders are made under section 34 of the Contagious Diseases (Animals) Act of 1878, and provide generally for the registration of all cowkeepers, dairymen, and purveyors of milk ; for the lighting, ventilation, drainage, and water supply of cowsheds and dairies to the satisfaction of the local authority ; and for the prevention of infection or contamination by servants or attendants, or by the improper use of the buildings. But besides these general provisions there are two important sections 9 and 15. Section 9 states that "a local authority *may* make regulations for (1) the inspection of cattle in dairies, (2) prescribing the lighting, ventilation, cleansing, drainage, and water supply, (3) for securing cleanliness of milk stores and milk vessels, (4) for prescribing precautions to prevent infection or contamination."

Section 15, as amended by the Order of 1899, provides that the milk of a diseased cow (1) shall not be mixed with other milk, (2) shall not be sold or used for human food, and (3) shall not be used as food for swine or other animals unless boiled ; and *in the case of (1) and (2)*, these shall apply to disease of the udder certified by a veterinary surgeon to be tubercular.

The Contagious Diseases (Animals) Act, 1886, section 9 (4) gives the officer of the local authority power of entry for enforcing the said Orders (not including the Order of 1899), and this Act also defines the "local authority" as the Rural or Urban Sanitary Authority (and so gives no power to the County Council).

The Infectious Diseases (Prevention) Act, 1890, section 4, gives the medical officer of health power to inspect any dairy, and, if accompanied by a veterinary surgeon, the cattle, if he has evidence that the milk is causing infectious disease (not including tuberculosis), provided that he has an order from a Justice having jurisdiction in this district. The dairyman may then be required to show cause why an order should not be made requiring him not to supply milk in the district.

Of the alterations in, and the additions to the foregoing, which are necessary to adequately protect the public, the most essential is that the "may" of section 9 of the Order of 1885 he altered to "shall," *i.e.*, the Order must be made obligatory on all local authorities. This is the first step to uniformity of procedure, the absence of which is a cause of great injustice in many cases. Then the word "disease," as used throughout these Orders, must be made to include not only tuberculosis of the udder, but also all cases of tuberculosis in which clinical symptoms can be seen, such as tubercular enteritis and diarrhœa ; and further, cows with tuberculous udders should be compulsorily slaughtered.

Another most important addition to the law is the making of notification of all udder diseases incumbent on cowkeepers and dairymen. It is manifestly both unsafe and unjust to allow the dairyman to decide which are dangerous affections of the udder and which are not, and especially in view of the fact that the diagnosis of tubercular mastitis calls for a good deal of pathological and clinical experience, and is a matter of difficulty even to the veterinary inspector.

With regard to the construction of byres, it is unfortunate that the Model Regulations fail to specify the minimum cubic space requirements for country cowsheds, and having in view the very insanitary condition of these, it would be well to require the same cubic space as in town byres, viz., 800 cubic feet for each cow.

It is also highly necessary that the local authority should have similar powers to those conferred by the Public Health (Scotland) Act, 1897, section 61, by which the local authority, on the certificate of the medical officer of health, or other legally qualified medical practitioner, that the outbreak or spread of infectious disease is attributable to milk supplied by any dairyman, whether wholesale or retail, may require the dairyman, whether within or without the district, to furnish a complete list of his customers in the district, and also of the farmers and dairymen or others from whom the milk was obtained.

Lastly, as was recommended in the report of the Departmental Committee on Preservatives and Colouring Matters in Food, 1901, the use of any preservatives or colouring matter whatever in milk should be prohibited. —*Journal of the Royal Sanitary Institute.*

THE BROOD MARE SOCIETY.

The Brood Mare Society, of which Mr. W. Phillpotts Williams, of 7 Carwinion Terrace, Liskeard, is the Secretary, is in no sense a commercial undertaking, but invites the support of all who on patriotic grounds desire to foster the breeding of a useful class of hackney horses in this country. The Society carries on its operations in the following manner: Mares are obtained by gift or purchase, and lent to the farmers at a retaining rent of a guinea per annum. They must be bred from by sires approved by the Society, and the colt when born becomes the property of the farmer, who pays the fee for the sire and provides the keep for the mare and foal. The work of the Society is at present in its infancy, but it is hoped that the scope of its operations will be greatly increased. If the system could be got into working order all over the country a great development of the breeding of horses suitable for national purposes would be the result.

Much attention is given to the sires from which our horses of all kinds, heavy and light, are bred; but the quality of the brood mares is also a matter of vital importance to the value of the product. At present almost any mare is considered good enough to breed from, and hence little or no care is taken, even in the horse-breeding districts, to retain the better mares and dispose of only those which are not of first-rate quality for breeding purposes. The supply of remounts for the Army obtainable within the British Islands is altogether inadequate to stand the strain of a great war and every possible effort ought therefore, in the national interest, to be put forward to increase it. At the present time the state of things in this respect is going from bad to worse. Our Government does nothing to prevent the export of these animals, so invaluable for the defence of the country, and the horse show system, as at present conducted, fails entirely to prevent them from leaving their districts. There is not a single instance of a mare being retained or put back in the district where she

was bred. The young mares are sold out of the district at the annual shows, very largely to foreign Governments. The other day the Danish Government gave an order to a single dealear for 300 young mares, and a Russian Prince wrote to the manager of the Compton Stud for particulars and price of every brood mare in Dorsetshire, as he had £30,000 to lay out on such stock for the Russian Government. As nothing is done at home to induce breeders to keep their promising young female stock, it is not surprising that the country is rapidly being denuded of all its best animals. Not that there is any lack of good material. Mares are cheap enough when they have done their fast work, and hunter mares especially are incapacitated very early, and if free from hereditary disease should have good breeding careers in front of them.

DIFFERENCE OF OPINION.

At Cambridge Police Court, on Saturday, Dec. 31st, before the Mayor (Mr. A. S. Campkin), Aldermen J. Taylor and H. M. Taylor, and Mr. George Smith, Francis Litchfield, 42, carrier, Little Shelford, was summoned for cruelty to a horse in St. Andrew's Street, on December 10th.—Defendant, who pleaded not guilty, was represented by Mr. H. O. S. Ellis.

Inspector Dooner, R.S.P.C.A., stated that on December 10th he saw defendant driving at a trot in St. Andrew's Street a brown horse attached to a carrier's cart. Witness examined the animal, and found it in very poor bodily condition. The hock was swollen and the tendons strained. Witness caused defendant to take the horse out, and it was conveyed to Mr. Banham's yard. On December 15th it was examined by Mr. Bennett, veterinary surgeon, at Little Shelford.—In cross-examination, witness said he remembered hearing Mr. Banham say that it was fit for doing a little work, and that if he stopped horses like that he would have to stop half those in the county.

Detective March stated that on the day in question he was in St. Andrew's Street, when he saw Inspector Dooner and the defendant with a horse and carrier's cart. Witness's attention was drawn to the near hind hock, which he found was swollen and inflamed.

Mr. Sampson Bennett, veterinary surgoon, Jesus Lane, stated that on December 15th he went with Inspector Dooner to Little Shelford to examine a brown horse. He found a swelling on the near hind hock. The animal also had a large spavin. The hock was also very hot and inflamed. On the horse being taken out and walked, it was found to be very lame, and could scarcely bear its own weight on the diseased leg. The horse was totally unfit for work.—In cross-examination, witness stated that the horse would have been lame on the 10th.

The defendant, on his own behalf, stated that on the day in question, while coming to Cambridge, he was stopped by Inspector Dooner. Witness told the Inspector that he was not aware that the horse was lame. Before sending the horse to Mr. Banham's yard, witness felt the horse's hock, and found that it was not hot. On seeing Mr. Banham, witness was told to put it in the cart and drive it home, and that it could be used for slow work.

William Hodge, farm bailiff, Great Shelford, stated that on December 10th he rode with the carrier to Cambridge, and had not noticed the horse being lame. Witness heard nothing said about the leg being hot and inflamed.

Thomas Moore, Great Shelford stated that he rode with defendant from Shelford to Cambridge, and there was nothing the matter with the horse.

Mr. G. A. Banham, veterinary surgeon, of Downing Street, deposed to examining the horse on the 10th. He found it lame on the near hind leg, but not so lame that it was unfit for work. The lameness was not very perceptible. He examined the hock, and found it was not heated. Subsequent to the examination witness told the defendant to put the horse in his cart and go home. He, however, advised him not to trot. Light work, he thought, would not hurt the horse. The animal, in his opinion, was not in pain, though it was practically impossible to tell whether an animal was in pain.

Mr. H. M. Taylor: Do you wish to maintain that the opinion of a veterinary surgeon on the question of pain is no better than anybody else's.

Mr. Banham: In some cases, yes.

Inspector Dooner: Would you be surprised to hear, Mr. Banham, that another veterinary surgeon has declared he has not the slightest doubt that the animal was in pain and quite unfit to work.

Mr. Banham: I should not be surprised to hear what some veterinary surgeons said at any time. (Laughter.)

The Bench were not satisfied that there had been cruelty, and dismissed the case.

CONTRADICTORY EVIDENCE.

An extraordinary conflict of evidence marked a case investigated by Mr. Plowden at Marylebone, his worship being led to remark at the close that although he had had to deal with thousands of such cases during the fifteen or sixteen years he had been on the bench, he had never heard a case in which there was such a remarkable contrariety in the testimony. Before the Court were William Black, a cabdriver, of 37, Thorpe Mews, Notting Hill, and Nathaniel John Scott, cab proprietor, of 11, Silvester Mews, Notting Hill, who were summoned, the former for cruelly torturing a horse by working it in an unfit condition, and the latter for causing it to be so worked.

Mr. E. W. Pheasant, solicitor, defended.

The case for the prosecution was supported by Police-constable Powell, 24 FR., Mr. Woodruff Hill, F.R.C.V.S., Mr. William S. Skelton, a barrister, and an inspector of the R.S.P.C.A. The horse, they said, fell down in Westbourne Grove on Guy Fawkes' Day, and although it made several attempts to get up it was unable to do so because of its very weak and exhausted condition. It was also suffering from several wounds, and after lying in the gutter for fully an hour it had to be removed on a horse ambulance. Mr. Hill declared that never in his thirty years' experience in cruelty cases had he seen a more disgraceful case. The animal was simply a framework—a skeleton—and was so terribly exhausted and emaciated that he gave it brandy and gruel. It was twenty years old at least. Mr. Skelton said it was mere skin and bone.

For the defence Mr. Pheasant called the two defendants, Prof. Hobday, F.R.C.V.S., Mr. Ridler, M.R.C.V.S., a brother of the defendant Scott, and Inspector Bradley, whose evidence was that the animal was only eight years old, and was perfectly fit for work, the fact that it did not get up being due to sulkiness and not to exhaustion. It only had two wounds, which were caused through it falling down. As to it being thin, that was due to its high breed.

Mr. Plowden, in giving his decision, said there was hardly a single feature or point in the case which, if asserted on one side, was not flatly contradicted on the other. One expected exaggeration and discrepancy and some contradiction in these cases, but such thorough conflict was quite outside his experience. The age of the horse was disputed, the condition of the ground was disputed, the doctors—well, of course they differed, they never did anything else—(laughter)—and, most remark-

able of all, the police differed. Never, indeed, had he been brought face to face with such a bewildering case in his life. The one solid fact was that the horse suddenly fell in the street. Mr. Hill and Mr. Skelton had given most positive testimony, and it would seem that they could not possibly be mistaken in what they said they saw. If the case rested there, everyone would admit it was a gross and scandalous case of cruelty, which ought to be punished with the whole force of the law. But the longer one lived the more one learnt that there were two sides to every question. Instead of the horse tumbling down from exhaustion they were told that it was an animal of very lively temperament, and that, like a woman, it was capricious and uncertain, and always did the thing you did not expect it to do. (Laughter.) No one would dream of reconciling the evidence of the different doctors. They differed as black from white, and he only wondered that they did not differ as to whether it was a horse at all. (Laughter.) The evidence of Inspector Bradley, however, that there was nothing in the world the matter with the animal, disposed of the whole matter, and after seeing the animal for himself he was puzzled, and completely at a loss to understand how Mr. Hill and Mr. Skelton could have formed the opinions they had expressed. Never had he seen an animal less like a skeleton. It was good looking, and evidently of lively temperament, and he hoped it would continue to be fit for years to come. In dismissing the summons his worship added that he had never been more staggered by anything he had seen after hearing the evidence.—*The Daily Telegraph.*

EIGHTH INTERNATIONAL VETERINARY CONGRESS AT BUDAPEST 1905.

The Congress held at Baden-Baden in 1899 having selected Budapest as the next place of assembly, the Eighth International Veterinary Congress will be held there accordingly, from the 3rd to the 9th of September, 1905.

Besides highly important questions of Veterinary Police, which occupied the attention of the former Congresses almost exclusively, it is proposed this time to treat of questions, not less important, pertaining to Biology, Hygiene, and Pathology.

The questions, therefore, enumerated in the accompanying programme, will be taken in three Sections:—Topics of Veterinary Police will be treated of at the general meetings, biological-hygienic or pathological subjects will respectively be discussed in section meetings.

Having regard to the International character of the Congress. papers will be read, and discussions carried on, in Hungarian, German, French, and English.

Representatives or delegates of governments and high authorities, of Universities, of Veterinary and Agricultural Colleges, of Hygienic Institutes, of Veterinary and Agricultural Societies, and also Veterinary Surgeons, and Physicians, can take part in the Congress as ordinary members; while farmers and pharmaceutical chemists who do not rank, as being delegates, among ordinary Members, can attend the discussions as Members extraordinary.

The subscription for a Member, ordinary or extraordinary, is 20 crowns = 17 s. Ladies' tickets can be procured for 10 crowns = 8 s. 10 d.

The Members, ordinary or extraordinary, are entitled to take part in all meetings of the Congress, and to receive all notices, as well as the general report, free of cost, whether they have attended the Congress or not. All members who give timely notice, so that arrangements can be made, will receive in advance the original text of the papers enumerated in the programme, together with an abstract in several languages.

Notices of intention to take part in the Congress, and enquiries concerning it, are to be addressed to the *General Secretary's Office of the Congress* (Budapest, VII. Rottenbiller-utcza 23); subscriptions, however, are to to be sent to the *Secretary's Office of the Royal Hungarian Veterinary College* (Budapest, VII. Rottenbiller-utcza 23).

The detailed programme, together with information as to excursions, etc., will be forwarded to Members later.

The importance of the questions enumerated in the programme, and the names of those assisting, furnish a guarantee of the claims of the Congress upon the ardent interest of all the profession. We beg to express the hope, that the Eighth International Veterinary Congress may prove a worthy successor to those which have preceded it.

On behalf of the Executive Committee:

GÉZA DE MAKTALVAY, *Sec. of State, President.*
DR. FRANCIS HUTYRA, *Managing Vice-President.*
DR. STEFAN DE RATZ, *General Secretary.*

The Indian Civil Veterinary Department.

In the annual report of the Civil Veterinary Department for the past official year it is noted that although the supply of serum for employment in cases of rinderpest and anthrax was largely increased, it was still far below the amount required. The Muktesar laboratory did its best, but until the projected buildings and machinery at Rurki are ready Indian requirements cannot possibly be met, not to mention those of other countries in the East which indent upon India. Colonel Morgan, head of the Department, regrets the delay in connection with the Rurki scheme, and some explanation seems called for, as the engines and centrifugal machines arrived in 1902. They have been stored at Rurki ever since, as the buildings were not ready to receive them. As for the work done with the serum available, continued success was gained. The number of cattle inoculated against rinderpest, when this appeared in epidemic form, was 47,360, and of these only 280 died. Without protection the percentage of deaths is 90 to 98. Again as regards anthrax the mortality after inoculation among 6,385 animals was as low as 33. It is stated that with the exception of one or two villages in the United Provinces no opposition whatever was shown to the system of injection under which the serum is applied, and it is added that "the rapidity with which the native owner has grasped the benefits to be derived from this method augurs well for the future, and will considerably reduce the difficulties of the Department in coping with the outbreaks of disease." In this in tance the perverse conservatism of the zamindar and raiyat against new and scientific methods has been broken down with singular ease, and it is imperative to take full advantage of the opening thus afforded. The annual losses of cattle are still enormous, averaging nearly 5,000 per week, and India cannot afford to let this mortality continue. The Civil Veterinary Department is one of those organisations which should be expanded far beyond its present limits, for the work it does is of the highest economical value and the money expended benefits the great mass of the agricultural population. Every animal saved represents a direct gain to the cultivator, and the Departmental staff should be large enough to cope promptly with each outbreak of disease as it is reported. With their recurring surpluses the Government of India would do well to divert more funds to the Civil Veterinary establishment, and encourage Local Administrations to do the same.—*Pioneer.*

DISEASES OF ANIMALS ACTS 1894 TO 1903 SUMMARY OF RETURNS.

Period.		Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Swine Fever.	
		Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Dogs.	Other	Out-breaks.	Slaugh-tered *
GT. BRITAIN. Week ended Dec. 31, 1904		31	39	..	..	29	38	..	..	8	37
Corresponding week in	1903 ..	19	24	..		24	44	..	..	21	105
	1902 ..	12	16	..	..	17	27	..	..	27	186
	1901 ..	18	33	..		17	54	..	..	27	126
Total for 52 weeks, 1904		1053	1570	..	..	1555	2658	..	..	1196	5603
Corresponding period in	1903 ..	767	1143	..	..	1456	2499	..	..	1478	7933
	1902 ..	678	1032	1	120	1155	2040	13	12	1688	8263
	1901 ..	651	971	12	669	1347	2370	1	1	3140	15237
IRELAND. Week ending Dec. 24, 1904		..	..	..	..	..	..	..	..	1	10
Corresponding Week in	1903 ..	..	..	..	..	..	..	..	..	..	3
	1902 ..	..	..	..	..	..	..	..	..	..	..
	1901 ..	..	..	..	..	1	2	..	..	..	..
Total for 52 Weeks, 1904		4	7	..	..	11	34	..	..	182	4144
Corresponding period in	1903 ..	4	11	..	..	4	6	2	..	172	4307
	1902 ..	..	..	..	..	10	43	..	..	166	3162
	1901 ..	2	4	..	..	5	6	1	1	227	4031

Board of Agriculture and Fisheries, Jan. 3rd, 1905.

Epizootic Lymphangitis, Week ending Aug. 6, 1 case.

Department of Agriculture and Technical Instruction for Ireland, (Castle Street), Dublin, Dec. 29th, 1904.

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection.

Veterinary Surgeon Censured.

John Phillips, a contractor, of Tooting, was summoned at the South-Western Court for causing a horse to be worked in an unfit state. The animal has since died.

For the defence Mr. W. Watt, M.R.C.V.S., was called. He said there was very little the matter with the horse, and though it had dried sores a little exercise would do it good.

Mr. Garrett: Such as drawing a load of sand?—Yes.

Mr. Green, an officer of the R.S.P.C.A., said this witness gave similar evidence in another case before Mr. Francis, who ordered him out of the witness-box, saying he did not believe a word he had said.

Mr. Garrett: Yes, I have had to restrain myself from saying the same thing. It is perfectly shocking to find a member of the Veterinary College willing to enter the witness-box to make such statements. I am not surprised to hear of the horse's death, for I saw the animal myself. It did not require a veterinary surgeon to assist one in forming the opinion that the horse was unfit for work.

The magistrate passed sentence of one month's imprisonment.—*Daily News.*

Patrington Veterinary Surgeon and the Horse.

At Withernsea Petty Sessions Alfred William Hobson Dows, a veterinary surgeon, residing at Patrington, was charged with cruelty to a horse. Mr. Holdich prosecuted on behalf of the N.S.P.C.A., and Mr. F. J. Gardam defended.

Evidence was given by Mr. Locking, solicitor, of Hull, to the effect that as he was returning from Holmpton on the day in question, he saw the defendant kick the horse under the body. The animal staggered and swerved across the road into the dyke, but a boy who was in the trap pulled it out again on to the road. Witness went up to the defendant and told him it was a brutal thing to do, to which defendant replied, "You can stand there and watch me do it again." Defendant walked towards the horse, which appeared terrified, and began to rear and plunge. The boy jumped out of the trap and the horse galloped off. The defendant then came up to witness and asked him by what right he had interfered, remarking "You think yourself a little God." Eventually a landlady told the defendant to go away.

In reply to Mr. Gardam, witness said he considered that the defendant had had some drink.

Mr. W. H. Locking, brother of the first witness, a chartered accountant, of Hull, gave evidence as to the kick, and Leonard Locking also corroborated.

Mr. Gardam, for the defence, said such a trivial case rarely came up for hearing. The facts were that the horse would not go, and the defendant got out of the trap and kicked it, but in no way administered such a blow as the prosecution would have them believe.

George William Blashill, of Bridlington, who was in Hollym village on the day, admitted that the defendant gave the horse a kick, but not a brutal one.

In reply to Mr. Holdich, witness said he was of opinion that horses required a kick sometimes, but only behind their fore legs. Mr. Locking walked up to the defendant in an unjustifiable manner.

There were a number of witnesses for the defence, but the Bench decided to hear the defendant, who admitted kicking the horse in the chest, in order to make it turn round. It was only with the flat of his boot, and a thing done every day in the country.

The Bench fined defendant 10s. and costs.

Mr. Gardam asked for a case to be stated, but this the Bench refused.—*Hull News.*

CURES FOR ABORTION.

That the agricultural interest in the treatment of abortion shows no abatement is evident from this abstract of an article in *The North British Agriculturist* :—

"It would seem that cures for abortion will soon be as plentiful as new varieties of disease-proof potatoes. We referred at considerable length last week to the carbolic-acid-bran-mash system, whose efficacy is beyond all question. We now proceed to notice several other specifics. In a pamphlet issued by Messrs. Bell and Riddle, analytical and manufacturing chemists, Hexham, on *Abortion in Cattle and its Treatment*, the authors say :—

> We give a few extracts from a short article kindly written for our pamphlet by Mr. C. Marshall, Broomhaugh, Riding Mill, who is a practical agriculturist, and has made a close study of the subject in addition to others appertaining to dairy farming.

In the course of the "few extracts" in question Mr. Marshall says :—

> When a cow aborts, *from whatever cause*, she should be isolated if possible, the fœtus burned in lime, and her hind parts well washed with a strong disinfectant, Bacilline or Nocard's are perhaps best. All discharges should also be disinfected, and a day or two after abortion she may have injected into the vagina a weak solution made by dissolving one Abortine Disc in three or four pints of water. This may be repeated occasionally, but the external washing and disinfecting should be done daily or oftener as long as there is any discharge. Then at intervals of ten or fourteen days, two or three injections of ordinary strength—made by dissolving one Disc in two pints of water—may be injected, after which she may be served at any time.

Was it not a strange thing that although Mr. Marshall thus testified that by the use of Bacilline and Abortine Discs "the worst attack will be speedily got under," yet he never made any mention of these special preparations in his lecture on Abortion at Glasgow.

The next cure that calls for notice is one which is recorded in the report recently issued by the Board of Agriculture in regard to the Distribution of Grants for Agricultural Education and Research. There were two herds in Nottinghamshire at which an outbreak of abortion took place. In the earlier of the two cases "Chinosol" was tried, but without avail. After that a "ten minim perle of 'Izal' was given each cow weekly," but cases of abortion still continued. Then the carbolic acid was tried and proved a failure, as was only to be expected, from the fact that, instead of beginning with doses of ¼ ounce, and working gradually up to ½ ounce doses given every alternate day, the acid in this case was only given in one drachm doses twice a week. Had the dose been anything like sufficient the result would have been different, but as it was the dose was only one-fourth of what is necessary to cure abortion. Finally, "Entol" was substituted for carbolic acid, and the outbreak ceased.

As to the nature and origin of this particular substance, "Entol", no information is vouchsafed in the report by the Board of Agriculture. We learn from private enquiry, however, that "Entol" is "a powerful antiseptic and germicide, prepared and sold by Mr. Bolton, chemist, Carlton Street, Nottingham." The report quoted in the Board of Agriculture's publication was an interim report, written by Mr. Blackshaw, Principal of the Midland Dairy Institute. In the Dairy herd at that Institution "Entol" has not as yet been used, as the authorities there adhere to the carbolic acid treatment as laid down by their former veterinary expert, Prof. Cave."

Prof. Mason's Lectures on Veterinary Hygiene.

Mr. Ringwood said he thought it was a great pity that the Committee did not accept the offer of the Department to send Professor Mason to lecture throughout the county. He had heard very good reports from other places, and they got the lectures for nothing.

Father Brennan said he advocated it the last day, and he was attacked outside for doing so.

Mons. Murphey : That is the same thing again—the spirit of hostility to the Department in everything they do.

The Chairman said Mr. Ringwood could bring forward a resolution on the subject at the next meeting of the Committee.—*Leinster Leader.*

Hygiene—Medical and Veterinary.

The Italian Government having expressed a desire to have the teaching courses separate for the Diploma in Hygiene, the teaching professors have sent in a memorial praying that the professional course shall remain as at present.—*La Clinica Vét.*

The Cause of Swine Fever.

To the Editor of the "Kentish Express."

Sir,—It may interest Kentish readers to know that precisely the same kind of swine fever existed in Japan fifty years ago as exists in Kent to-day, as the following story told by a sea captain of the old school to the writer of this letter will show. My friend had command of a British ship that was anchored in one of their harbours, where a breakwater was being built and other extensive works were going on, on which large numbers of English and other foreigners were employed, the said ship being the home or hotel for the time being of the men so employed. It was the Captain's duty to make purchases of all the food supplies. A number of pigs were purchased every Monday morning to be slaughtered during the ensuing week. The night previous to bringing them on board with a view of effecting a sale the Japs used to force them to take salt. The effect of this was that the poor things had an insatiable thirst the following morning ; they would drink, drink, drink, till they were blown like a "poisoned pup" as the saying is. The captain buying them when so inflated would purchase them much too dear, believing the seven scores pigs to be at least ten. The following day some would be taken ill and the third day would die. The English people would not think of eating them, so overboard they went. The Japs, knowing the cause of their death, wanted nothing better and were waiting for them. The swine fever of that date and the swine fever of to day is one and the same thing, being brought on by improper feeding and improper management. People boil salt meat and then throw the broth or stock in the hog tub ; others use soda in cleansing the utensils about the house, and this also goes to the hog tub. Either of these two ingredients acts as poison to swine in the same way as it would to ferrets ; therefore no one need be surprised if they are ailing after partaking of it and ultimately die. There is no such disease as contagious swine fever. All the restrictions which have caused such worry and loss to the farmers for so long are not worth a snap of the finger. The fact that the number of cases of pigs ailing and dying has not diminished proves it. Veterinary surgeons who are getting nothing from the Board of Agriculture agree with me. It's all moonshine and it's high time farmers took this matter in hand.—Yours truly,

T. PALMER.

Stockbury.

Outbreak of Glanders near Spalding.

At a meeting of the Cattle Diseases Executive Committee of the Holland Division of Lincolnshire, held at Spalding on the 20th ult., the outbreak of glanders on the farm of Mr. J. T. Smith, of Pinchbeck, Northgate, was considered.

It was stated that out of eight horses concerned, five showed obvious symptoms of glanders, whilst the remaining three, although not visibly infected, were shown by a test to be suffering from it The Committee expressed themselves in favour of the slaughter of the whole of the horses, so as to stamp out the disease. They were valued by the owner at £211, and by the Chairman (Alderman Bunting) at £128. The Committee agreed to offer Mr. Smith compensation of one-fourth value for the animals attacked, and full value for any which might prove not suffering from glanders, this being the highest scale of compensation allowed. As an alternative they offered £100 compensation. The owner declined to accept the offer without further consideration. As the matter stands, if the horses are not slaughtered they will be confined to the farm, and forbidden to go on any high road.—*Yorkshire Post.*

Death from Hydrophobia.

A Reuter telegram from Victoria (B.C.), states that Mr. James Colevin, a prominent shipbuilder of Victoria, who was bitten by a wolf in September, has just died of hydrophobia. This is the first recorded case of hydrophobia in British Columbia.

Devon C.C. and Anthrax.

The Devonshire County Council recently adopted a report of the Executive (Diseases of Animals Act) Committee. The Committee were of opinion that the existing method of enquiry into suspected cases of anthrax was unsatisfactory, and they recommended the Council to apply to the Board of Agriculture to issue an order providing that in every case of suspected anthrax a thorough examination shall be made by the veterinary officers of the Board of a part of each animal, in the same manner as in the case of swine fever.

Mr. R. Densham (Chairman of the Committee) explained that a veterinary officer of the Board did not necessarily mean a professional man at the Board of Agriculture in London. The Committee hoped to secure approval to a plan whereby a duly qualified veterinary surgeon practising within the district affected should be employed to report upon the case. It was felt that only by the prompt employment of veterinary skill on the spot could the ravages of anthrax be arrested. The appointment of a veterinary surgeon for this purpose should of course be subject to the approval of the Board of Agriculture, but the Council could not have too much formality, because delay meant danger and death.

Ostertag's "Meat Inspection."

Those who read German have long known this work as the standard text-book on this subject. Thanks to Dr. E. V. Wilcox, of Washington, U.S.A., who has done a remarkably good translation, we are now all able to make use of Dr. Ostertag's handbook of over 800 pages. It is well printed, copiously illustrated, and clearly arranged. Messrs. Baillière, Tindal, and Cox are the publishers. The translation is made from the fourth edition of the German original, so that any words of praise from us are unnecessary. It may be well to give our readers an idea of the scope of the book, and this can be done by reference to the table of contents.

Section I treats generally of meat inspection its nature, history, and municipal regulations.

II. details the laws in force in Germany.

III.—The Art of Butchering—refers to the various animals used as food, to inspection before slaughter and to methods of slaughter.

IV.—Inspection of Slaughtered Animals—treats of the methods, chief points to inspect, condemnation and stamping, and inspection of imported meat.

V. Normal appearance and differentiation of meat and organs.

VI.—Abnormal Physiological Conditions—such as Immaturity, emaciation, coloration, and odour.

VII. General Pathology of Food Animals.

VIII. Noteworthy Organic Changes.

IX. Anomalies of the Blood.

X. Effect of Drugs and Auto-intoxications.

XI. Animal Parasites.

XII. Plant parasites (Infectious Diseases)—a not very clear heading as it treats of all the microbean diseases of Animals.

XIII. Emergency Slaughter—in case of disease or accident, natural death and defective bleeding are included.

XIV—Post-mortem alterations in meat—putrefaction and decomposition.

XV. Adulteration and colouring of partially prepared foods, such as sausage.

The penultimate section is devoted to the preservation of meat—salting and pickling, smoking, the use of drugs, as boric and salicylic acids, preservation by heat and cold. Refrigeration and cold storage.

The last section treats of boiling, sterilisation, and harmless disposal of meat.

This mere statement of the contents shows that the work traverses the whole field of meat inspection. Each subject is treated exhaustively and yet there is not a dull chapter.

No meat inspector can do without the book, and those veterinary surgeons who are occasionally called in by local authorities to give an opinion will find in this practical work useful guidance and a sure haven for reference.

We ought to add that there is an introduction by Dr. J. R. Mohler which tells circumstantially of meat inspection in the United States. Incidentally this introduction shows the immense value of veterinary inspection, and explains how it is that foreign meat arrives in Europe so remarkably free from disease.

The work should find a place in every veterinary library that aims at being up to date.

CORRESPONDENCE.

CRUELTY CASE AT GOOLE.

Sir,

In sending you the enclosed report of the cruelty case at Goole permit me to remark on the great facility with which Professor Pritchard is able to translate the sufferings of the lower animals into language understandable to the layman. What a remarkable faculty to be capable of expressing, to such a nicety, the degree of suffering! Only to think that in having a horn removed the beast suffers ten times as much pain as a man would in having his thumb nail sawn through. Unfortunately the report does not give the method in which the operation was carried out, but I should think from the number which had been operated on shears must have been used, and if so I should have imagined that from the instantaneous nature of the operation the amount of pain could not be so great as stated, but I must accept the word of so great an authority as Prof. Pritchard and assume that this greater suffering is due to a greater sensibility to pain in the beast than in man—the reverse of what is generally believed. What a blessing it would be if Prof. Pritchard could be prevailed upon to draw up a list of the common causes of suffering in the

lower animals and their co-efficient pains in man, as for example:

(1) Horse working with sore shoulder=Man sitting on the business end of a tin tack.

What a boon such a list, if it included all the common conditions which lead to cruelty prosecutions, would be to members of the profession who are frequently called upon to give evidence in such cases, and greater boon still to those zealous officers of the R.S.P.C.A. who in their anxiety to deal fairly between man and beast, and with their natural horror of exaggeration, are apt sometimes to understate the amount of suffering and so allow some inhuman monster to escape the just penalty of his cruel conduct.—Yours truly,

H. G. Bowes.

[In *The Yorkshire Post* the evidence is more fully reported than in the cutting previously sent us. The portion to which Mr. Bowes refers is subjoined].

"Evidence as to the condition of the beasts was given by Inspector Bone, of the R.S.P.C.A., and also by Professor Pritchard, ex-Professor of the Royal Veterinary College, and late President of the Veterinary Society, who stated that the animals would undoubtedly suffer intense pain while the operation was being performed. To convey an idea as to how great the pain would be he said a beast would suffer ten times as much pain as a human being would if he had his thumb-nail sawn through.

Cross-examined by Mr. Everatt, the witness said that this operation was entirely unnecessary.

In defence, the fact that the animals were dishorned was admitted, but it was claimed there was no cruelty, and that it would be more cruel to allow the horns to remain, as the beasts would gore and seriously damage one another. The case was argued at some length, and the defendant Girvan entered the box and stated that he had been practising for seven years. The first two years and a half of that period were passed in Scotland, where the operation was legal. He had no idea that the operation was illegal in England, and he did not consider that it was cruel."

VETERINARY INSPECTORS AND THE AGRICULTURAL DEPARTMENT OF IRELAND.

Dear Sir,

The elevation of the veterinary profession is, I trust, the desire of all its members, I am not one of those who believe that we are in a deplorable position at present, yet I see, or fancy I see, many ways by which we might advance, and one of the principal is by securing the better recognition by our governing powers, the leading lights of which have not the slightest conception of the benefits our profession has bestowed, and can still bestow upon our country and Empire.

The Rt. Hon. Walter Long, M.P., in a recent speech, stated that the veterinarians available for departmental work were below "the mark," and you, sir, in your editorial say—"does Mr. Long think that men who accept £300 a year without prospect of advancement, or right to pension, and whose appointments are terminable at a month's notice, are the only available men in the profession." This is rather a reflection on the unfortunate individuals who hold these despised positions, and I would like to know if Mr. Long ever met and had converse with even one of them? and if not, on what grounds he makes the statement attributed to him. Is his data supplied by clerks and military men who seek advancement by keeping the expert in the backgronnd? And now, sir, I think the obvious deduction to be taken from Mr. Long's speech and your editorial is that these positions should be made such as would attract the best the profession can give, and to this end I ask your help. On many occasions you have assisted the officers of the Army Veterinary Department, so that I am sure you will not refuse the Civil Veterinary Service your aid.

The Veterinary Officers of the Veterinary Department of the Irish Privy Council, now serving under the Veterinary Branch of Department of Agriculture, have been memorializing "the powers that be" for many years to have their positions made pensionable and a suitable scale of pay fixed, similar to that of other branches of the Civil Service. Well, seven years ago an advance of 2/- per day was granted to all officers of, and over, twelve years service, and this is the sum total of the Government's recognition of valuable service (hitherto the maximum salary was reached at five years), therefore having now completed twelve years' service the veterinarian has no further inducement to advance or even endeavour to remain efficient. Some of our officers have over 30 years service, and while year after year additional duties have been imposed, practically there has not been a revision of salary such as other branches of the Service have been favoured with, and, as you know, the A.V.D. have secured two revisions inside 10 years, and have increments up to 30 years service.

In July last the Treasury offered to establish the Irish Portal Veterinary Inspection Staff, fixing a scale of pay, commencing at £200 to advance by yearly increment of £10 to £300 a year, thus the maximum would be reached after ten years service and would be £1 2s. 6d. less than at present. But the gravest part of the Treasury communication is that in which they decline to give credit for back service, because they say the whole time of the officers was was not required; and when this was shown to be inaccurate, they say—well you knew your position was not pensionable when you accepted it, and we won't now give you the benefit of our decision that the position ought to have been established. Now seeing that an enormous amount of extra work has been imposed upon us since we were appointed, and for which we remain uncompensated, could anything be more unjust than this Treasury red tape reply?

It has taken the Treasury seven weary years to answer our last memorial, and by this inexcusable delay those men who have reached 55 years of age are excluded from pension rights, and those nearing that age would have to retire at 65 years of age on a miserable pittance.

Can you, Mr. Editor, conceive that all this is done in the name of the British Government and our world-wide-deservedly-popular King? We are Members of the Royal College of Veterinary Surgeons and have been unjustly dealt with, and I think I shall not have to appeal to our fellow members in vain when I ask them to help us to secure justice.

Currente Calamo.

THE VETERINARY SURGEON AS A HORSEMAN.

Sir,

At this time when the question of curriculum and University education is being passed from mouth to mouth, it may not be out of place for us to consider if there really is any study whose omission from the education of the veterinary student, unless he were proficient in it, might prejudice him in the practice of his profession. I refer to the question of horsemanship. I have heard it remarked that it is the exception rather than the rule to find a veterinary surgeon a good horseman; I do not go so far as that, for it is well known we have amongst our members some accomplished horsemen, but what I do say is, that for a profession which to a great extent depends on horses and hunting men for an existence we are lamentably deficient in this branch, which should be and is of such vital importance to us. How many men graduate from our College who know nothing about horsemanship, or whose knowledge of it is so limited that their equestrian performances would be sufficient to bring them into ridicule with a large percentage of clients?

Let us consider what horsemanship means to a veterinary surgeon. Can a veterinary surgeon always give a reliable opinion on a disputed case of soundness in wind without riding a hunter? A client asks his veterinary surgeon's opinion of the soundness of a horse and his fitness for hunting and saddle work—how can a man judge the actions and paces of a hunter without riding him. There are a multitude of questions a client will ask you that can only be *properly* answered after riding a horse, *e.g.*, What do you think of his paces? How does he carry his saddle? What are

his shoulders like in the saddle? What sort of a mouth has he got, is he temperate and free from vice? It may be said that these are questions that can be answered best by the buyer or seller, perhaps so, but not in every case, and the veterinary surgeon who can "get up" and give a reliable opinion on these and other questions will certainly appeal more favourably to a client than his non-riding *confrère*. It may be argued that students should take their own opportunities of making themselves horsemen, but some have not the opportunity and others no inclination to do so when opportunity offers, and this is all the more reason why it should be insisted on that a man should at any rate be able to ride before going in to practice.

Of course every veterinary surgeon has his own way of testing a horse's wind, and it may be by no means in *every* case necessary to be on his back to hear him, provided he is *fairly* ridden by somebody else; but in disputed cases one cannot be too thorough. Let us take as an example a "Rein" horse galloped round in a circle or a figure of 8 for the benefit of a veterinary surgeon who is not riding the horse. In a confined space circling with a reinhorse is not easy, and the horse's head is twisted and distorted, entirely altering the position of the larynx, giving rise to a variety of sounds which a non-professional man will tell you are unsoundnesses; but take that horse into a ploughed field or on the grass, ride himself yourself, and send him along with his head and larynx in the normal position and you will probably have a very different tale to tell. When mounted one can hear *every* inspiration, whereas if you are not on his back you only hear them when he is within hearing distance, which is a distinct disadvantage.

It must be a humiliating position for a veterinary surgeon to have to ask a groom to gallop a horse for him, he knowing all the time that he cannot ride. I do not mean to say that every veterinary surgeon should be an accomplished steeplechase rider, but what I *do* say is, that unless he is prevented by any infirmity, he should at any rate be sufficiently well versed in horsemanship to be able to test a disputed hunter's wind thoroughly. A student of the present day has to pass an examination in stable management, and I do not see what is to prevent riding being included in this subject—it should not be difficult to arrange, and would often save a man later from ridicule at the expense of his client.

I trust these remarks will not incur the "righteous ire" of those it may appear to "hit"—they are not intended as personalities, but merely expressions of opinion on a subject which I think appeals to many of us in the profession as worthy of consideration.

F.R.C.V.S.

HORSE AND CATTLE MEDICINES.

Sir,

Enclosed label speaks for itself. My attention was called to it by a doctor, who says this chemist is doing an immense trade in horse and cattle medicines.

Don't you think some action ought to be taken? I might also mention that a young M.R.C.V.S. just started in the town has been calling on my clients soliciting their work and offering to insure the horses at the same time. If this kind of practice is tolerated I am sorry for the future of the veterinary profession.

Where is this much vaunted social progress and professional etiquette? I must confess I have seen more of it in print than in practice.

M.R.C.V.S.

——— ALTERATIVE
CONDITION POWDERS.

While Conditioning Horses, give one table-spoonful twice a week; or as a cure for humour, swelled legs, or grease, one table-spoonful, every night, in a bran mash.

PREPARED ONLY BY ———,
Agricultural and Veterinary Chemist.

ANTHRAX.

Sir,

Your extract from *The Blackpool Gazette* with the heading "Butcher dies from Anthrax," suggests to me the following queries:

Where was the Veterinary Inspector all the time?

Was his evidence purposely eliminated on account of the "staggerers" we have lately read as being propounded by members of our profession from the witness box?

Why wasn't the carcase of the cow cremated?

Is it true that a cow can become infected with anthrax by inhalation?

If any of your numerous readers can throw any light on the subject, I shall not be the only one to subscribe himself,

Gratefully yours,

M.R.C.V.S.

THE REGISTER R.C.V.S.

Dear Sir,

During the time I was Secretary for the Professor McCall Testimonial Fund, several circulars were returned through the Dead Letter Office with such remarks as "dead," "gone away," "not known," "advertised for," and "insufficiently addressed," etc. At first I took no notice of returned circulars, but when they began to come back four and five each mail I thought it might be of some use to the Registration Committee to keep note of them.

I herewith enclose a list of those I noted as "returned," and if you will kindly publish them in your widely circulated *Record*, it may be the means of a few corrections in the Register of Veterinary Surgeons.—Yours faithfully,

T. MARRIOTT.

Anderson, Robt., 412 Main St., Devonport, Iowa, U.S.A.
Ashe, James W. H., Rosedale, Maritzburg, Natal, Africa.
Becket, G. C., 145 West 66th St., New York, U.S.A.
Bell, E. W., Georgetown, Penang, Straits Settlement.
Bird, Robert H., Helena, Montana, U.S.A.
Crossland, Geo., Dunolly, Victoria, Australia.
Dawkins, Thos. Butcher S., Cape Town.
Dobson, John, Winnipeg, Manitoba, Canada.
Douglas, Thomas, Buenos Ayres, S. America.
Foster, Frederick, Fort Bayard, New Mexico, U.S.A.
Frazer, John Thompson, Rochester, U.S.A.
Hardy, Adam, Roxburgh, America.
Hutchinson, Fred., Standerton, S. Africa.
Irvine, William, Woodstock, Ontario, Canada.
Leverett, Caleb R., Denver, Colorado, U.S.A.
Lewis, Edward, Silverton, San Juan, Colorado, U.S.A.
Lyman, Chas. Parker. Springfield, Mass., U.S.A.
McGwire W. Walter, Melbourne, Australia.
M'Naughten, Edward, Melbourne, Australia.
M'Mahon, Charles, Melbourne, Australia.
Mellor, Austin, Philadelphia, Penn., U.S.A.
Mitchell, William R. J., New York City, U.S.A.
Page, W. M., Graham's Town, South Africa.
Rice, F. C. Hartford, Connecticut, U.S.A.
Scott, Wm., Ryl. Arty., Victoria Barracks, Sydney, N.S.W.
Secker, J. W. A., Jackson Co., Kansas, U.S.A.
Smith, W. F., Hurricana Stud Farm, Amsterdam, New York.
Tagg, J., "The Raj," Durbhanga, Tirhoot, Bengal, India
Talbott, Bower, New York, U.S.A.
Turnbull, Charles, Port Natal, S. Africa.
Wills, Samuel Joseph, Queensland, Australia.
Woodroffe, Harry Arthur, Lexington, Kentucky, U.S.A.
Wragge, Henry, Sandhurst, Australia.
Wyche, Thomas, Chicago, Illinois, U.S.A.
Young, G. Folliott, Ausbin, Texas, U.S.A.
Walters, Luke William, Melbourne, Australia.

Mr. G. CROWHURST asks us to note that his initial is as here shown, not as printed last week in the list of Members qualified from the Dick College.

COMMUNICATIONS AND PAPERS RECEIVED.—Messrs. H. Caulton Reeks, C. Townsend, A. W. Hill, S. L. Stephens, G. Crowhurst. "F.R.C.V.S."